

ANALYTICAL RESULTS

Prepared for:

Langan
500 Hyde Park
Doylestown PA 18901

215-348-7101

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425**SAMPLE GROUP**

The sample group for this submittal is 941574. Samples arrived at the laboratory on Friday, April 29, 2005.
The PO# for this group is SUNOCO PHILLY REFINER.

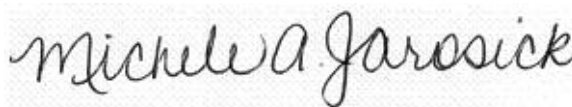
Client DescriptionS218-042805 Grab Water Sample
S219-042805 Grab Water Sample
S229-042805 Grab Water Sample
S225-042805 Grab Water Sample
S216-042805 Grab Water Sample**Lancaster Labs Number**4514707
4514708
4514709
4514710
4514711ELECTRONIC SUN: Aquaterra Tech.
COPY TO
1 COPY TO LL
1 COPY TO Langan
ELECTRONIC Langan
COPY TO

Attn: Brad Spancake

Attn: Angela Miller
Attn: Jason Hanna
Attn: Dennis Webster

Questions? Contact your Client Services Representative
Angela M Miller at (717) 656-2300.

Respectfully Submitted,



Michele A. Jarosick
Senior Chemist, Coordinator

Lancaster Laboratories Sample No. WW 4514707

S218-042805 Grab Water Sample
SUN: Philadelphia Refinery AOI-4

Collected: 04/28/2005 12:45 by MH

Account Number: 10132

Submitted: 04/29/2005 17:15
Reported: 05/06/2005 at 16:42
Discard: 06/06/2005

Langan
500 Hyde Park
Doylestown PA 18901

S-218

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
06035	Lead	7439-92-1	< 0.0010	0.0010	0.00021	mg/l	1
07879	EDB in Wastewater						
01087	Ethylene dibromide	106-93-4	0.052	0.029	0.0098	ug/l	1
07805	PAHs in Water by GC/MS						
03947	Naphthalene	91-20-3	250.	51.	5.	ug/l	5
03956	Fluorene	86-73-7	< 10.	10.	1.	ug/l	1
03963	Phenanthrene	85-01-8	< 10.	10.	1.	ug/l	1
03967	Pyrene	129-00-0	< 10.	10.	1.	ug/l	1
03971	Chrysene	218-01-9	< 10.	10.	1.	ug/l	1
Due to insufficient sample, the reporting limits for the GC/MS semivolatile compounds were raised.							
02302	UST-Waters by 8260B						
02010	Methyl Tertiary Butyl Ether	1634-04-4	< 50.	50.	5.	ug/l	10
05401	Benzene	71-43-2	2,200.	50.	5.	ug/l	10
05402	1,2-Dichloroethane	107-06-2	< 50.	50.	10.	ug/l	10
05407	Toluene	108-88-3	360.	50.	7.	ug/l	10
05415	Ethylbenzene	100-41-4	1,300.	50.	8.	ug/l	10
05420	Isopropylbenzene	98-82-8	< 50.	50.	10.	ug/l	10
06310	Xylene (Total)	1330-20-7	2,400.	50.	8.	ug/l	10
The reporting limits for the GC/MS volatile compounds were raised because sample dilution was necessary to bring target compounds into the calibration range of the system.							

Commonwealth of Pennsylvania Lab Certification No. 36-037

This sample was filtered in the lab for dissolved metals.

Trip blank vials were not received by the laboratory for this sample group.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis Trial#	Date and Time	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	05/04/2005 22:40	David K Beck	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories Sample No. WW 4514707

S218-042805 Grab Water Sample
SUN: Philadelphia Refinery AOI-4

Collected: 04/28/2005 12:45 by MH

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S-218

07879	EDB in Wastewater	SW-846 8011	1	05/03/2005 19:21	Richard A Shober	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	05/04/2005 15:05	Joseph M Gambler	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	05/04/2005 20:34	Jolene M Graham	5
02302	UST-Waters by 8260B	SW-846 8260B	1	05/02/2005 19:13	Emiley A King	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	05/02/2005 19:13	Emiley A King	n.a.
06050	ICP/MS SW-846 Water	SW-846 3010A Mod.	1	05/02/2005 22:00	James L Mertz	1
07786	EDB Extraction	SW-846 8011	1	05/02/2005 08:00	Deborah M Zimmerman	1
07807	BNA Water Extraction	SW-846 3510C	1	05/02/2005 09:00	Danette S Blystone	1

Lancaster Laboratories Sample No. WW 4514708

S219-042805 Grab Water Sample
SUN: Philadelphia Refinery AOI-4

Collected: 04/28/2005 12:20 by MH

Account Number: 10132

Submitted: 04/29/2005 17:15
Reported: 05/06/2005 at 16:42
Discard: 06/06/2005

Langan
500 Hyde Park
Doylestown PA 18901

S-219

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
06035	Lead	7439-92-1	< 0.0010	0.0010	0.00021	mg/l	1
07879	EDB in Wastewater						
01087	Ethylene dibromide	106-93-4	< 0.029	0.029	0.0096	ug/l	1
07805	PAHs in Water by GC/MS						
03947	Naphthalene	91-20-3	< 10.	10.	1.	ug/l	1
03956	Fluorene	86-73-7	< 10.	10.	1.	ug/l	1
03963	Phenanthrene	85-01-8	< 10.	10.	1.	ug/l	1
03967	Pyrene	129-00-0	< 10.	10.	1.	ug/l	1
03971	Chrysene	218-01-9	< 10.	10.	1.	ug/l	1
02302	UST-Waters by 8260B						
02010	Methyl Tertiary Butyl Ether	1634-04-4	< 5.	5.	0.5	ug/l	1
05401	Benzene	71-43-2	23.	5.	0.5	ug/l	1
05402	1,2-Dichloroethane	107-06-2	< 5.	5.	1.	ug/l	1
05407	Toluene	108-88-3	< 5.	5.	0.7	ug/l	1
05415	Ethylbenzene	100-41-4	< 5.	5.	0.8	ug/l	1
05420	Isopropylbenzene	98-82-8	< 5.	5.	1.	ug/l	1
06310	Xylene (Total)	1330-20-7	6.	5.	0.8	ug/l	1

Commonwealth of Pennsylvania Lab Certification No. 36-037

This sample was filtered in the lab for dissolved metals.

Trip blank vials were not received by the laboratory for this sample group.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	05/04/2005 22:51	David K Beck	1
07879	EDB in Wastewater	SW-846 8011	1	05/03/2005 19:51	Richard A Shober	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	05/04/2005 16:04	Joseph M Gambler	1
02302	UST-Waters by 8260B	SW-846 8260B	1	05/02/2005 19:38	Emiley A King	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	05/02/2005 19:38	Emiley A King	n.a.
06050	ICP/MS SW-846 Water	SW-846 3010A Mod.	1	05/02/2005 22:00	James L Mertz	1
07786	EDB Extraction	SW-846 8011	1	05/02/2005 08:00	Deborah M Zimmerman	1

*=This limit was used in the evaluation of the final result



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

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Lancaster Laboratories Sample No. WW 4514708

S219-042805 Grab Water Sample

SUN: Philadelphia Refinery AOI-4

Collected: 04/28/2005 12:20 by MH

Account Number: 10132

Submitted: 04/29/2005 17:15

Langan

Reported: 05/06/2005 at 16:42

500 Hyde Park

Discard: 06/06/2005

Doylestown PA 18901

S-219

07807 BNA Water Extraction

SW-846 3510C

1 05/02/2005 09:00 Danette S Blystone

1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories Sample No. WW 4514709

S229-042805 Grab Water Sample
SUN: Philadelphia Refinery AOI-4

Collected: 04/28/2005 13:05 by MH

Account Number: 10132

Submitted: 04/29/2005 17:15
Reported: 05/06/2005 at 16:42
Discard: 06/06/2005

Langan
500 Hyde Park
Doylestown PA 18901

S-229

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
06035	Lead	7439-92-1	< 0.0010	0.0010	0.00021	mg/l	1
07879	EDB in Wastewater						
01087	Ethylene dibromide	106-93-4	0.033	0.029	0.0097	ug/l	1
07805	PAHs in Water by GC/MS						
03947	Naphthalene	91-20-3	220.	51.	5.	ug/l	5
03956	Fluorene	86-73-7	11.	10.	1.	ug/l	1
03963	Phenanthrene	85-01-8	15.	10.	1.	ug/l	1
03967	Pyrene	129-00-0	< 10.	10.	1.	ug/l	1
03971	Chrysene	218-01-9	< 10.	10.	1.	ug/l	1
02302	UST-Waters by 8260B						
02010	Methyl Tertiary Butyl Ether	1634-04-4	< 50.	50.	5.	ug/l	10
05401	Benzene	71-43-2	1,900.	50.	5.	ug/l	10
05402	1,2-Dichloroethane	107-06-2	< 50.	50.	10.	ug/l	10
05407	Toluene	108-88-3	< 50.	50.	7.	ug/l	10
05415	Ethylbenzene	100-41-4	350.	50.	8.	ug/l	10
05420	Isopropylbenzene	98-82-8	150.	50.	10.	ug/l	10
06310	Xylene (Total)	1330-20-7	630.	50.	8.	ug/l	10

The reporting limits for the GC/MS volatile compounds were raised because sample dilution was necessary to bring target compounds into the calibration range of the system.

Commonwealth of Pennsylvania Lab Certification No. 36-037

This sample was filtered in the lab for dissolved metals.

Trip blank vials were not received by the laboratory for this sample group.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	05/04/2005 22:54	David K Beck	1
07879	EDB in Wastewater	SW-846 8011	1	05/03/2005 20:20	Richard A Shober	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	05/04/2005 21:33	Jolene M Graham	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories Sample No. WW 4514709**S229-042805 Grab Water Sample****SUN: Philadelphia Refinery AOI-4**

Collected: 04/28/2005 13:05 by MH

Account Number: 10132

Submitted: 04/29/2005 17:15

Langan

Reported: 05/06/2005 at 16:42

500 Hyde Park

Discard: 06/06/2005

Doylestown PA 18901

S-229

07805	PAHs in Water by GC/MS	SW-846 8270C	1	05/05/2005 10:54	Brian K Graham	5
02302	UST-Waters by 8260B	SW-846 8260B	1	05/03/2005 06:45	Andrea D Moore	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	05/03/2005 06:45	Andrea D Moore	n.a.
06050	ICP/MS SW-846 Water	SW-846 3010A Mod.	1	05/02/2005 22:00	James L Mertz	1
07786	EDB Extraction	SW-846 8011	1	05/02/2005 08:00	Deborah M Zimmerman	1
07807	BNA Water Extraction	SW-846 3510C	1	05/02/2005 09:00	Danette S Blystone	1

Lancaster Laboratories Sample No. WW 4514710

S225-042805 Grab Water Sample
SUN: Philadelphia Refinery AOI-4

Collected: 04/28/2005 13:20 by MH

Account Number: 10132

Submitted: 04/29/2005 17:15
Reported: 05/06/2005 at 16:42
Discard: 06/06/2005

Langan
500 Hyde Park
Doylestown PA 18901

S-225

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
06035	Lead	7439-92-1	< 0.0010	0.0010	0.00021	mg/l	1
07879	EDB in Wastewater						
01087	Ethylene dibromide	106-93-4	< 0.029	0.029	0.0096	ug/l	1
07805	PAHs in Water by GC/MS						
03947	Naphthalene	91-20-3	< 10.	10.	1.	ug/l	1
03956	Fluorene	86-73-7	56.	10.	1.	ug/l	1
03963	Phenanthrene	85-01-8	71.	10.	1.	ug/l	1
03967	Pyrene	129-00-0	< 10.	10.	1.	ug/l	1
03971	Chrysene	218-01-9	< 10.	10.	1.	ug/l	1
The GC/MS semivolatiles internal standard peak areas were outside of the QC limits for both the initial injection and the re-injection. The values here are from the initial injection of the sample.							
02302	UST-Waters by 8260B						
02010	Methyl Tertiary Butyl Ether	1634-04-4	< 5.	5.	0.5	ug/l	1
05401	Benzene	71-43-2	24.	5.	0.5	ug/l	1
05402	1,2-Dichloroethane	107-06-2	< 5.	5.	1.	ug/l	1
05407	Toluene	108-88-3	10.	5.	0.7	ug/l	1
05415	Ethylbenzene	100-41-4	< 5.	5.	0.8	ug/l	1
05420	Isopropylbenzene	98-82-8	87.	5.	1.	ug/l	1
06310	Xylene (Total)	1330-20-7	11.	5.	0.8	ug/l	1

Commonwealth of Pennsylvania Lab Certification No. 36-037

This sample was filtered in the lab for dissolved metals.

Trip blank vials were not received by the laboratory for this sample group.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	05/04/2005 22:58	David K Beck	1
07879	EDB in Wastewater	SW-846 8011	1	05/03/2005 20:50	Richard A Shober	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	05/04/2005 22:32	Jolene M Graham	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories Sample No. WW 4514710**S225-042805 Grab Water Sample****SUN: Philadelphia Refinery AOI-4**

Collected: 04/28/2005 13:20 by MH

Account Number: 10132

Submitted: 04/29/2005 17:15

Langan

Reported: 05/06/2005 at 16:42

500 Hyde Park

Discard: 06/06/2005

Doylestown PA 18901

S-225

02302	UST-Waters by 8260B	SW-846 8260B	1	05/03/2005 22:21	Andrea D Moore	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	05/03/2005 22:21	Andrea D Moore	n.a.
06050	ICP/MS SW-846 Water	SW-846 3010A Mod.	1	05/02/2005 22:00	James L Mertz	1
07786	EDB Extraction	SW-846 8011	1	05/02/2005 08:00	Deborah M Zimmerman	1
07807	BNA Water Extraction	SW-846 3510C	1	05/02/2005 09:00	Danette S Blystone	1

Lancaster Laboratories Sample No. WW 4514711

S216-042805 Grab Water Sample
SUN: Philadelphia Refinery AOI-4

Collected: 04/28/2005 13:40 by MH

Account Number: 10132

Submitted: 04/29/2005 17:15
Reported: 05/06/2005 at 16:42
Discard: 06/06/2005

Langan
500 Hyde Park
Doylestown PA 18901

S-216

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
06035	Lead	7439-92-1	< 0.0010	0.0010	0.00021	mg/l	1
07879	EDB in Wastewater						
01087	Ethylene dibromide	106-93-4	< 0.029	0.029	0.0096	ug/l	1
07805	PAHs in Water by GC/MS						
03947	Naphthalene	91-20-3	150.	50.	5.	ug/l	5
03956	Fluorene	86-73-7	60.	10.	1.	ug/l	1
03963	Phenanthrene	85-01-8	87.	10.	1.	ug/l	1
03967	Pyrene	129-00-0	< 10.	10.	1.	ug/l	1
03971	Chrysene	218-01-9	< 10.	10.	1.	ug/l	1
02302	UST-Waters by 8260B						
02010	Methyl Tertiary Butyl Ether	1634-04-4	210.	10.	1.	ug/l	2
05401	Benzene	71-43-2	290.	10.	1.	ug/l	2
05402	1,2-Dichloroethane	107-06-2	< 10.	10.	2.	ug/l	2
05407	Toluene	108-88-3	48.	10.	1.	ug/l	2
05415	Ethylbenzene	100-41-4	110.	10.	2.	ug/l	2
05420	Isopropylbenzene	98-82-8	73.	10.	2.	ug/l	2
06310	Xylene (Total)	1330-20-7	240.	10.	2.	ug/l	2

The reporting limits for the GC/MS volatile compounds were raised because sample dilution was necessary to bring target compounds into the calibration range of the system.

Commonwealth of Pennsylvania Lab Certification No. 36-037

This sample was filtered in the lab for dissolved metals.

Trip blank vials were not received by the laboratory for this sample group.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	05/04/2005 23:01	David K Beck	1
07879	EDB in Wastewater	SW-846 8011	1	05/03/2005 21:20	Richard A Shober	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	05/05/2005 12:53	Brian K Graham	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories Sample No. WW 4514711**S216-042805 Grab Water Sample****SUN: Philadelphia Refinery AOI-4**

Collected: 04/28/2005 13:40 by MH

Account Number: 10132

Submitted: 04/29/2005 17:15

Langan

Reported: 05/06/2005 at 16:42

500 Hyde Park

Discard: 06/06/2005

Doylestown PA 18901

S-216

07805	PAHs in Water by GC/MS	SW-846 8270C	1	05/05/2005 13:52	Brian K Graham	5
02302	UST-Waters by 8260B	SW-846 8260B	1	05/03/2005 13:25	Andrea D Moore	2
01163	GC/MS VOA Water Prep	SW-846 5030B	1	05/03/2005 13:25	Andrea D Moore	n.a.
06050	ICP/MS SW-846 Water	SW-846 3010A Mod.	1	05/02/2005 22:00	James L Mertz	1
07786	EDB Extraction	SW-846 8011	1	05/02/2005 08:00	Deborah M Zimmerman	1
07807	BNA Water Extraction	SW-846 3510C	1	05/02/2005 09:00	Danette S Blystone	1

Quality Control Summary

Client Name: Langan

Group Number: 941574

Reported: 05/06/05 at 04:42 PM

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank LOQ**</u>	<u>Blank MDL</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Batch number: 051200009A Ethylene dibromide	Sample number(s): 4514707-4514711 < 0.030 0.030 0.010 ug/l 92 92 60-140 0 20								
Batch number: 05120WAC026 Naphthalene	Sample number(s): 4514707-4514711 < 10. 10. 1. ug/l 73 82 58-108 12 30								
Fluorene	< 10. 10. 1. ug/l 91 99 61-116 9 30								
Phenanthrene	< 10. 10. 1. ug/l 89 94 68-111 5 30								
Pyrene	< 10. 10. 1. ug/l 93 96 68-114 3 30								
Chrysene	< 10. 10. 1. ug/l 87 91 70-111 4 30								
Batch number: 051226050003A Lead	Sample number(s): 4514707-4514711 < 0.0010 0.0010 0.00021 mg/l 101 80-120								
Batch number: T051221AA Methyl Tertiary Butyl Ether	Sample number(s): 4514707-4514708 < 5. 5. 0.5 ug/l 97 77-127								
Benzene	< 5. 5. 0.5 ug/l 103 85-117								
1,2-Dichloroethane	< 5. 5. 1. ug/l 109 77-132								
Toluene	< 5. 5. 0.7 ug/l 105 85-115								
Ethylbenzene	< 5. 5. 0.8 ug/l 99 82-119								
Isopropylbenzene	< 5. 5. 1. ug/l 100 80-120								
Xylene (Total)	< 5. 5. 0.8 ug/l 101 83-113								
Batch number: T051222AA Methyl Tertiary Butyl Ether	Sample number(s): 4514709 < 5. 5. 0.5 ug/l 94 77-127								
Benzene	< 5. 5. 0.5 ug/l 103 85-117								
1,2-Dichloroethane	< 5. 5. 1. ug/l 103 77-132								
Toluene	< 5. 5. 0.7 ug/l 103 85-115								
Ethylbenzene	< 5. 5. 0.8 ug/l 100 82-119								
Isopropylbenzene	< 5. 5. 1. ug/l 100 80-120								
Xylene (Total)	< 5. 5. 0.8 ug/l 99 83-113								
Batch number: T051231AA Methyl Tertiary Butyl Ether	Sample number(s): 4514710-4514711 < 5. 5. 0.5 ug/l 97 95 77-127 2 30								
Benzene	< 5. 5. 0.5 ug/l 108 103 85-117 6 30								
1,2-Dichloroethane	< 5. 5. 1. ug/l 114 109 77-132 4 30								
Toluene	< 5. 5. 0.7 ug/l 105 100 85-115 4 30								
Ethylbenzene	< 5. 5. 0.8 ug/l 95 94 82-119 1 30								
Isopropylbenzene	< 5. 5. 1. ug/l 95 93 80-120 2 30								
Xylene (Total)	< 5. 5. 0.8 ug/l 96 93 83-113 3 30								

Sample Matrix Quality Control

*- Outside of specification

**-This limit was used in the evaluation of the final result for the blank

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.

Quality Control Summary

Client Name: Langan

Group Number: 941574

Reported: 05/06/05 at 04:42 PM

	MS	MSD	MS/MSD	RPD	BKG	DUP	DUP	Dup RPD
<u>Analysis Name</u>	<u>%REC</u>	<u>%REC</u>	<u>Limits</u>	<u>RPD</u>	<u>MAX</u>	<u>Conc</u>	<u>Conc</u>	<u>Max</u>
Batch number: 051200009A	Sample number(s): 4514707-4514711							
Ethylene dibromide	87		65-135			< 0.029	< 0.029	0 (1) 30
Batch number: 051226050003A	Sample number(s): 4514707-4514711							
Lead	98	98	75-125	0	20	0.0108	0.0107	1 20
Batch number: T051221AA	Sample number(s): 4514707-4514708							
Methyl Tertiary Butyl Ether	99	99	69-134	0	30			
Benzene	111	110	83-128	1	30			
1,2-Dichloroethane	119	117	73-136	1	30			
Toluene	107	106	83-127	1	30			
Ethylbenzene	95	96	82-129	0	30			
Isopropylbenzene	97	97	81-130	1	30			
Xylene (Total)	95	96	82-130	0	30			
Batch number: T051222AA	Sample number(s): 4514709							
Methyl Tertiary Butyl Ether	95	96	69-134	1	30			
Benzene	106	106	83-128	0	30			
1,2-Dichloroethane	105	106	73-136	1	30			
Toluene	108	106	83-127	2	30			
Ethylbenzene	99	97	82-129	1	30			
Isopropylbenzene	97	97	81-130	1	30			
Xylene (Total)	98	98	82-130	0	30			
Batch number: T051231AA	Sample number(s): 4514710-4514711							
Methyl Tertiary Butyl Ether	94		69-134					
Benzene	105		83-128					
1,2-Dichloroethane	108		73-136					
Toluene	108		83-127					
Ethylbenzene	101		82-129					
Isopropylbenzene	103		81-130					
Xylene (Total)	102		82-130					

Surrogate Quality Control

Analysis Name: EDB in Wastewater

Batch number: 051200009A

1,1,2,2-
Tetrachloroethane

4514707	106
4514708	72
4514709	88
4514710	70
4514711	77
Blank	101
DUP	92
LCS	93
LCSD	95
MS	117

Limits: 52-120

*- Outside of specification

**-This limit was used in the evaluation of the final result for the blank

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.

Quality Control Summary

Client Name: Langan
Reported: 05/06/05 at 04:42 PM

Group Number: 941574

Surrogate Quality Control

Analysis Name: PAHs in Water by GC/MS
Batch number: 05120WAC026

Nitrobenzene-d5		2-Fluorobiphenyl	Terphenyl-d14
4514707	83	76	95
4514708	80	77	93
4514709	101	90	101
4514710	101	92	101
4514711	94	93	70
Blank	87	85	106
LCS	83	75	104
LCSD	86	89	110
Limits:	51-123	64-112	53-135

Analysis Name: UST-Waters by 8260B
Batch number: T051221AA

Dibromofluoromethane		1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4514707	94	90	94	98
4514708	93	89	95	100
Blank	97	94	93	98
LCS	94	92	96	101
MS	97	88	94	102
MSD	96	87	94	100
Limits:	81-120	82-112	85-112	83-113

Analysis Name: UST-Waters by 8260B
Batch number: T051222AA

Dibromofluoromethane		1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4514709	94	89	97	103
Blank	93	88	94	98
LCS	93	91	95	100
MS	92	87	96	100
MSD	92	92	95	98
Limits:	81-120	82-112	85-112	83-113

Analysis Name: UST-Waters by 8260B
Batch number: T051231AA

Dibromofluoromethane		1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4514710	102	91	95	111
4514711	94	91	95	104
Blank	96	88	93	97
LCS	94	87	93	99
LCSD	91	90	94	100
MS	93	87	94	100
Limits:	81-120	82-112	85-112	83-113

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.



For Lancaster Laboratories use only

Acct. # 10132

Group# 941574 Sample # 4514707-11

COC # 0081319

Please print. Instructions on reverse side correspond with circled numbers.

[illegible]

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected	BMQL	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	MPN	Most Probable Number
IU	International Units	CP Units	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	NTU	nephelometric turbidity units
C	degrees Celsius	F	degrees Fahrenheit
meq	milliequivalents	lb.	pound(s)
g	gram(s)	kg	kilogram(s)
ug	microgram(s)	mg	milligram(s)
ml	milliliter(s)	l	liter(s)
m3	cubic meter(s)	ul	microliter(s)
<	less than - The number following the sign is the <u>limit of quantitation</u> , the smallest amount of analyte which can be reliably determined using this specific test.		
>	greater than		
J	estimated value – The result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ).		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns $>25\%$
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is $<CRDL$, but $\geq IDL$
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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